



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Risk Assessment and Science Support Branch: Final Draft of Product Chemistry Science Chapter For 1,4-Bis(bromoacetoxymethyl)-2-butene RED, PC Code 0360, Case 3030, Barcode D251928.

FROM: Robert Quick, Chemist
Risk Assessment and Science Support Branch
Antimicrobials Branch(7510C)

TO: Norm Cook, Chief
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Antimicrobials Division(7510C)

Attached please find the following documents for the final draft product chemistry science chapter for 1,4 Bis(bromoacetoxymethyl)-2-butene:

1. Draft bibliography chapter (Norm Cook, Allen Vaughan, Najm Shamim)
2. Draft science chapter (Norm Cook, Allen Vaughan, Najm Shamim)

This is the final draft of these documents and concurrence and sign-off is required.

PRODUCT CHEMISTRY SCIENCE CHAPTER FOR BIS (BROMOACETOXY)-2-BUTENE

Chemical Overview

The following active ingredient is covered by this Registration Eligibility Document.

Common Name: Bis (bromoacetoxy)-2-butene

Chemical Name: Acetic Acid,bromo-2-butene-1,4-diyl ester

CAS Registry Number: 20679-58-7

OPP Chemical Code: 035605

Molecular Formula: C₈H₁₀O₄Br₂

Trade and Other Names: BBAB; Busan 1210

Basic Manufacturer: Buckman Laboratories International, Inc.

PRODUCT CHEMISTRY ASSESSMENT OF BIS (BROMOACETOXY)-2-BUTENE

- A. Bis (bromoacetoxy)-2-butene is a biocide produced by an integrated manufacturing process. The physical and chemical properties of the technical grade product of the active ingredient are summarized below:

830.6302 Color Dark brown opaque

830.6303 Physical State Slightly viscous liquid

830.6304 Odor Halide or acidic odor

830.7200 Melting Point Not applicable. Product is a liquid

830.7220 Boiling Point 130°C./±2.52°C. at 5.0 mm Hg

830.7300 Bulk Density 1.7 gm/ml

830.7840 Solubility in g/100 ml of solvent at 20-21°C.

830.7860

water	0.063
acetone	>50
dichloromethane	>50
ethylacetate	>50
n-hexane	0.589
toluene	>50
methanol	unstable

830.7950 Vapor Pressure 1.59×10^6 mm Hg at 20°C

830.7370 Dissociation Constant Waiver granted

830.7550 Octanol/Water Partition Coefficient KOW=49.6

830.7560

830.7570

830.7000 pH 2.79 at 25°C.

830.6313 Stability

unstable at 50°C ± 2°C. after 14 days
no change after 28 days at 13-20°C.
stable to metal and metal ions at 20°C.

830.6314 Oxidation/Reduction No reaction with:

water
monoammonium phosphate
potassium permanganate
turpentine
zinc produces a 19°C. rise in
temperature

830.6315 Flammability 141°C. at 1 atm.

830.6316 Explodability N/A

830.7100 Viscosity 16.1 cP at 20°C.
10.4 cP at 40°C.

830.6319 Miscibility N/A

830.6320 Corrosion Not observed

830.6321 Dielectric Breakdown N/A

B. Product Identity, Composition and Analysis

Data are available on the following:

830.1550 Product identity and composition

830.1600 Description of materials used to produce the product.

830.1620 Description of production process

830.1650 Description of formulation process

830.1670 Discussion of formation of impurities

830.1700 Preliminary Analysis

830.1750 Certified Limits

830.1800 Enforcement Analytical Method

The product identity, composition and analysis data have been reviewed by the EPA and found to be adequate. The manufacturing process is known and the discussion of impurities sufficiently elucidates the nature of the impurities and a CSF for the technical chemical have been accepted. Analyses are available for the technical chemical.

No additional data are needed for product identity, composition and analysis for the technical chemical.

REFERENCES

1. MRID#: 431888-01: Larry S. Cohen and Carl F. Watson. Performing Laboratory: Buckman Laboratories International, Inc.: April 8, 1994.
2. MRID#: 434413-01: Larry S. Conway, Russ Fues and Carl F. Watson. Performing Laboratory: Buckman Laboratories International, Inc.: October 28, 1994.
3. MRID#: 431763-01: David F. Wells. Performing Laboratory: Springborn Laboratories Inc.: March 9, 1994.
4. MRID#: 433761-01: David F. Wells. Performing Laboratory: Springborn Laboratories Inc. August 29, 1994.
5. MRID#: 433761-02: David F. Wells. Performing Laboratory: Springborn Laboratories, Inc. September 12, 1994.
6. MRID#: 433761-03: John Mao. Performing Laboratory: Springborn Laboratories, Inc. September 9, 1994.
7. MRID#: 433843-01: David F. Wells. Performing Laboratory: Springborn Laboratories Inc. August 29, 1994.
8. MRID#: 438153-01: David F. Wells. Performing Laboratory: Springborn Laboratories Inc. October 6, 1995.